

# USACE New Orleans District

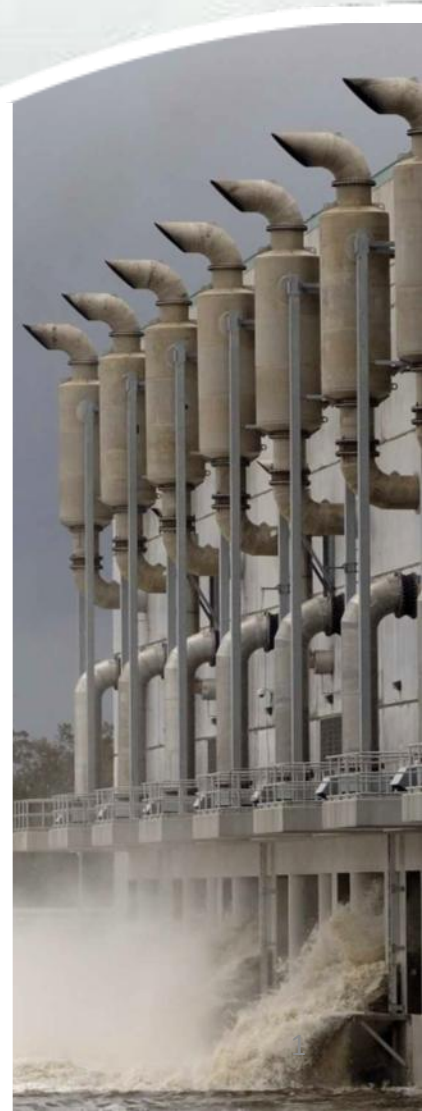
USACE Midwest Regional Seminar, Oct. 18, 2012

**Col. Ed Fleming**  
New Orleans District Commander



®

US Army Corps of Engineers  
**BUILDING STRONG®**



# ***Our Mission Statement***

***The New Orleans District provides comprehensive water resources management to include navigation, hurricane and storm damage risk reduction and environmental stewardship for south Louisiana in order to ensure public safety and benefit the nation. On order, conduct contingency operations as well as support to the National Response Framework.***



# Our Organization

★ **9** Divisions world wide

★ **43** Districts

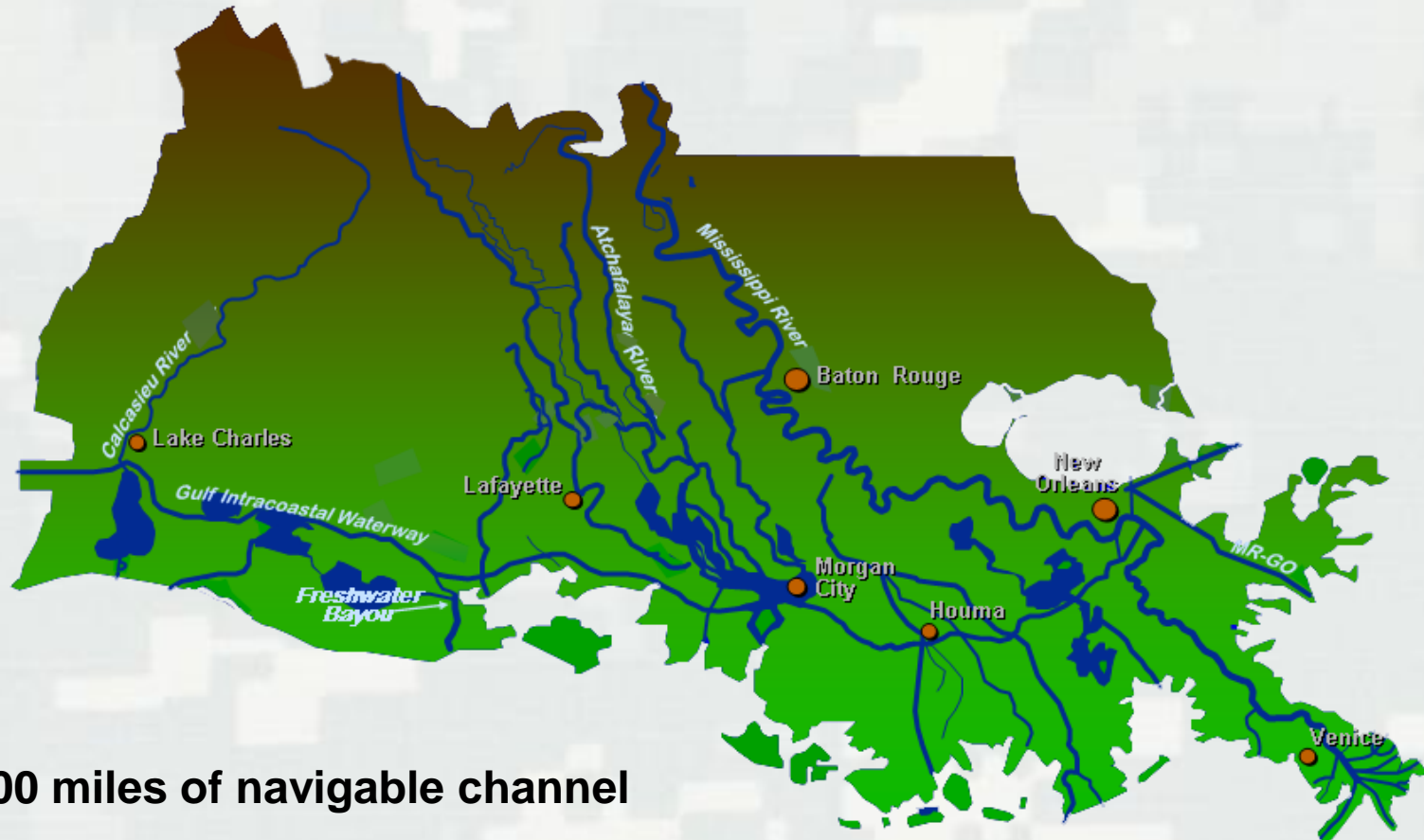
★ Covers the entire US and **91** other countries

★ **34,600** civilian employees

★ **650** military members



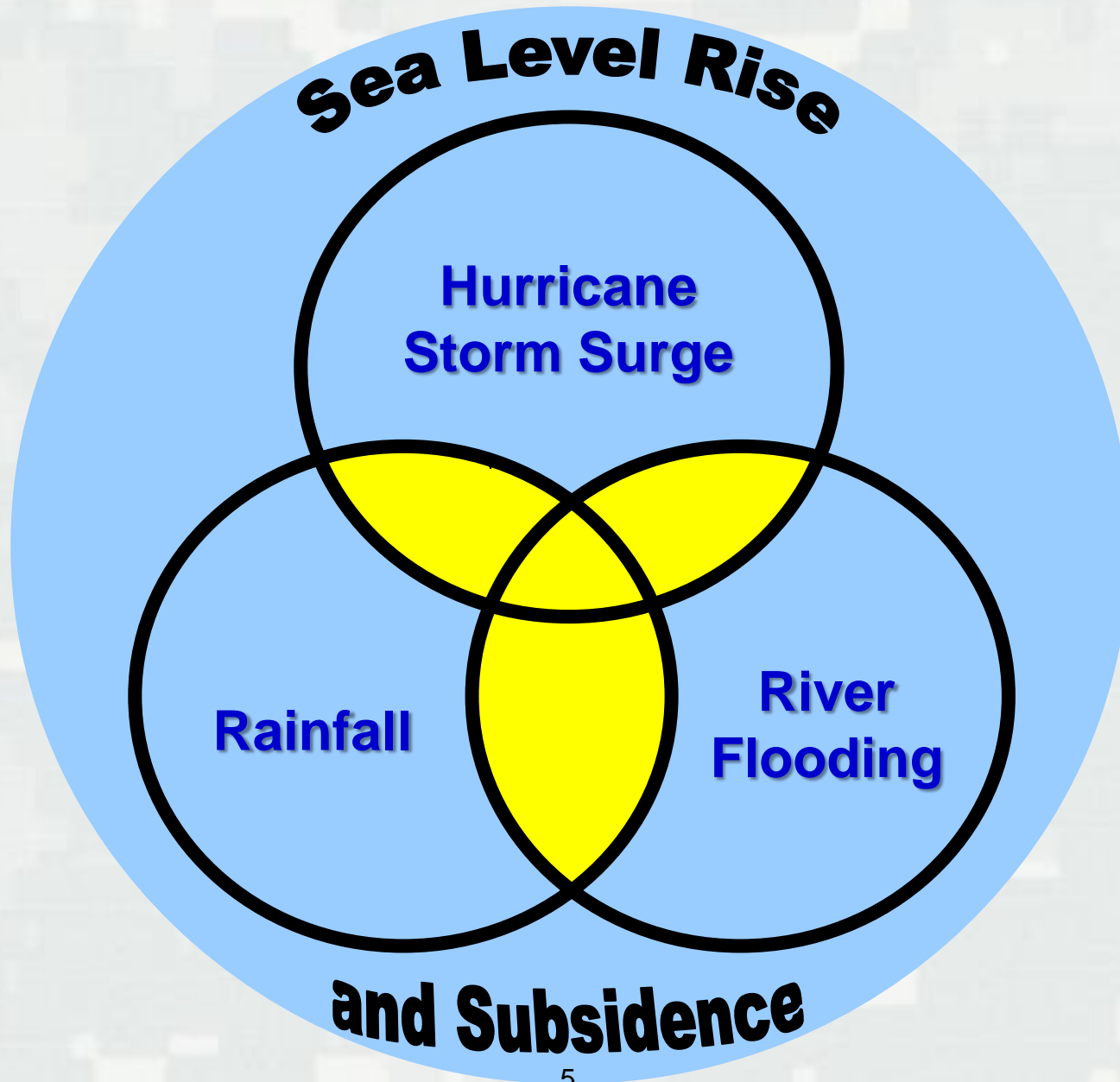
# ***New Orleans District***



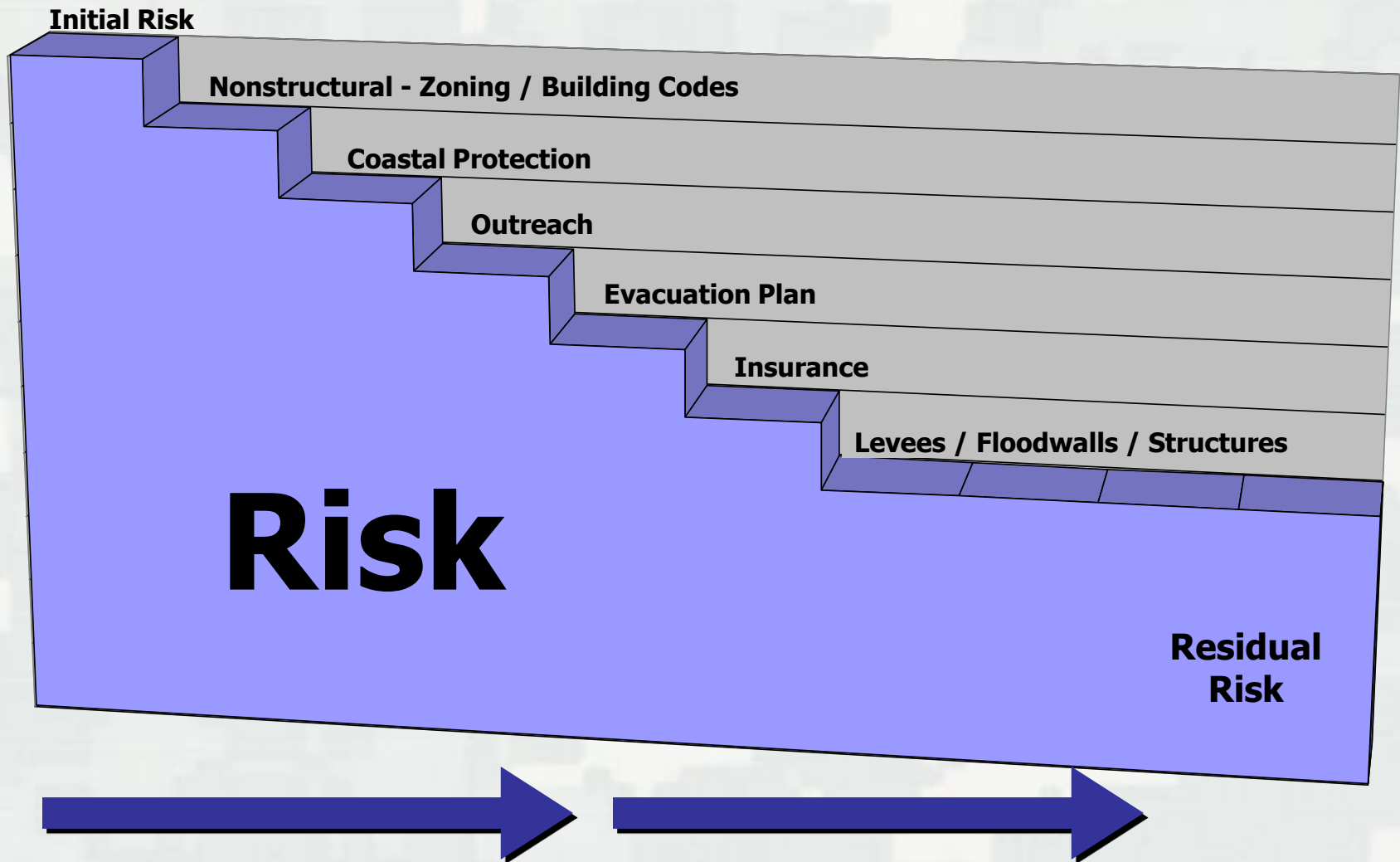
- 2,800 miles of navigable channel
- 14,500 miles of coastline
- 973 MR&T miles of levees
- 325 miles of hurricane levees
- 18 locks and control structures
- 15 pumping plants
- 13 recreation areas



# The Three Major Flood Risks in Coastal LA



# ***Risk Shared Responsibility***



# Multiple Lines of Defense



(Graphic from [www.mlods.org](http://www.mlods.org) )

## ***Elements include:***

- Coastal restoration/protection
- Structural measures
- Non-structural features



# Perimeter “Defense”

## GREATER NEW ORLEANS HURRICANE AND STORM DAMAGE RISK REDUCTION SYSTEM (HSDRRS) Hurricane Plan Status - August 2012



US Army Corps  
of Engineers



**Bonnet Carré Pump Station  
Lakefront Levee**



**17th St. Outfall Canal  
Interim Closure Structure**



**Seabrook Floodgate  
Complex**



**New Orleans East  
I-10 Crossing**



**IHNC Surge  
Barrier Wall**



**St. Bernard  
Floodwall**



**Harvey Canal Floodwall**



**West Closure Complex**



**Eastern Tie-In**



# Land Area Change in Coastal Louisiana (1932 to 2010)

By Brady R. Conlison, John A. Baras, Gregory D. Snyers, William Skovlin, Michelle Fischer, Holly Beck, Nadine Traskas, Brad Griffin, David Heckman

## Introduction

Coastal Louisiana has experienced the most rapid and extensive loss of land area in the United States since 1932. The loss of land area is a result of a combination of natural and human-induced factors. The natural factors include subsidence, erosion, and sediment starvation. The human-induced factors include levee construction, marsh destruction, and land reclamation. The loss of land area has resulted in the loss of habitat, wildlife, and cultural resources. The loss of land area has also resulted in the loss of property and infrastructure. The loss of land area has resulted in the loss of life.

## Methodology

This study used a combination of remote sensing, field data, and historical maps to estimate land area change in coastal Louisiana from 1932 to 2010. The remote sensing data were obtained from the National Aeronautics and Space Administration (NASA) and the United States Geological Survey (USGS). The field data were obtained from the Louisiana Department of Transportation and Development (DOTD) and the Louisiana Department of Natural Resources (DNR). The historical maps were obtained from the Louisiana Department of Transportation and Development (DOTD) and the Louisiana Department of Natural Resources (DNR). The land area change was estimated by comparing the remote sensing data, field data, and historical maps. The land area change was estimated by comparing the remote sensing data, field data, and historical maps. The land area change was estimated by comparing the remote sensing data, field data, and historical maps.

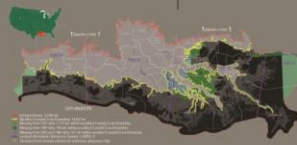


Figure 1. Map of Louisiana showing the locations of the study areas. The map also shows the Mississippi River Delta Basin and the Gulf of Mexico.

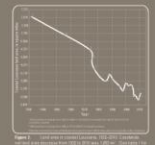


Figure 2. Total land area change in coastal Louisiana from 1932 to 2010.

Basin	1932	1940	1950	1960	1970	1980	1990	2000	2010
Calcasieu-Sabine Basin	1,234	1,123	1,012	901	790	679	568	457	346
Terrebonne Basin	2,345	2,234	2,123	2,012	1,901	1,790	1,679	1,568	1,457
Atchafalaya Delta Basin	3,456	3,345	3,234	3,123	3,012	2,901	2,790	2,679	2,568
Breton Sound	4,567	4,456	4,345	4,234	4,123	4,012	3,901	3,790	3,679
Barataria Basin	5,678	5,567	5,456	5,345	5,234	5,123	5,012	4,901	4,790
Pontchartrain Basin	6,789	6,678	6,567	6,456	6,345	6,234	6,123	6,012	5,901

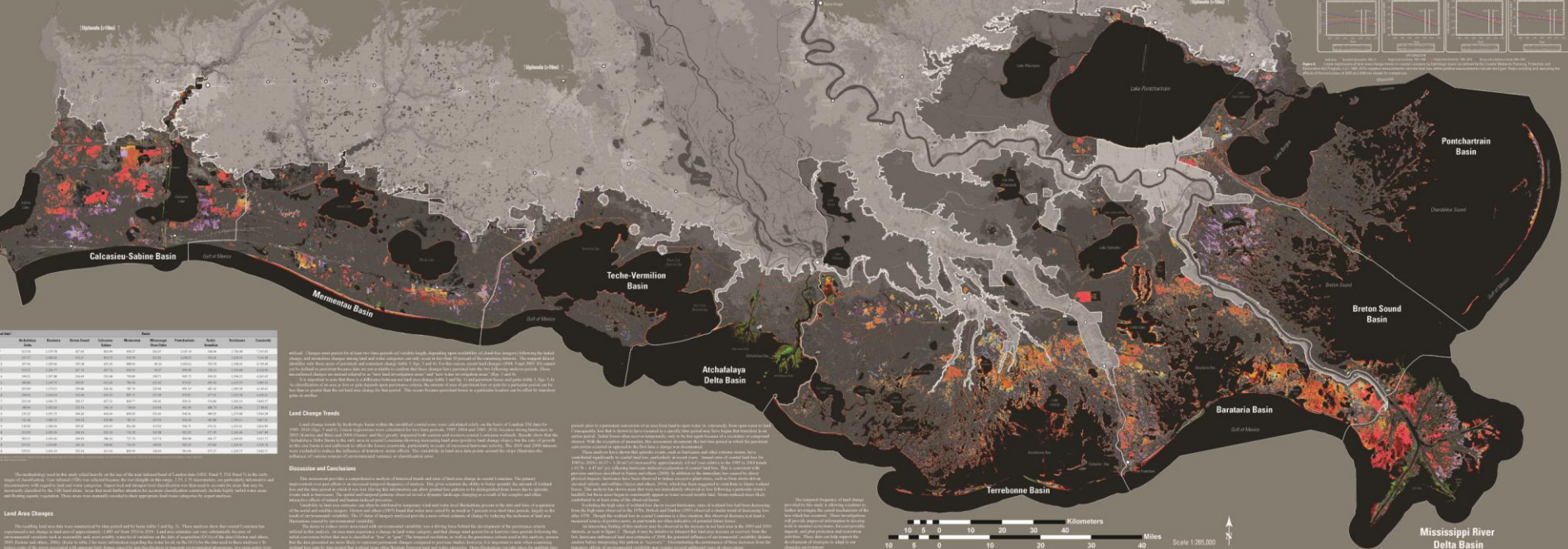
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Table 2. Total land area change in coastal Louisiana from 1932 to 2010.



Figure 3. Land area change in coastal Louisiana from 1932 to 2010.



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Table 3. Total land area change in coastal Louisiana from 1932 to 2010.

The methodology used in this study was based on the use of the National Aeronautics and Space Administration (NASA) and the United States Geological Survey (USGS) remote sensing data. The remote sensing data were obtained from the National Aeronautics and Space Administration (NASA) and the United States Geological Survey (USGS). The remote sensing data were obtained from the National Aeronautics and Space Administration (NASA) and the United States Geological Survey (USGS). The remote sensing data were obtained from the National Aeronautics and Space Administration (NASA) and the United States Geological Survey (USGS).

## Land Area Changes

The land area changes in coastal Louisiana from 1932 to 2010 were estimated by comparing the remote sensing data, field data, and historical maps. The land area changes in coastal Louisiana from 1932 to 2010 were estimated by comparing the remote sensing data, field data, and historical maps. The land area changes in coastal Louisiana from 1932 to 2010 were estimated by comparing the remote sensing data, field data, and historical maps.

Calcasieu-Sabine Basin: The land area change in the Calcasieu-Sabine Basin from 1932 to 2010 was estimated to be 1,234 square kilometers. The land area change in the Calcasieu-Sabine Basin from 1932 to 2010 was estimated to be 1,234 square kilometers. The land area change in the Calcasieu-Sabine Basin from 1932 to 2010 was estimated to be 1,234 square kilometers.

## Land Change Trends

The land change trends in coastal Louisiana from 1932 to 2010 were estimated by comparing the remote sensing data, field data, and historical maps. The land change trends in coastal Louisiana from 1932 to 2010 were estimated by comparing the remote sensing data, field data, and historical maps. The land change trends in coastal Louisiana from 1932 to 2010 were estimated by comparing the remote sensing data, field data, and historical maps.

## Discussion and Conclusions

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Barataria Basin: The land area change in the Barataria Basin from 1932 to 2010 was estimated to be 5,678 square kilometers. The land area change in the Barataria Basin from 1932 to 2010 was estimated to be 5,678 square kilometers. The land area change in the Barataria Basin from 1932 to 2010 was estimated to be 5,678 square kilometers.

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# Major Causes Of Wetland Loss

Barrier  
Island  
Degradation



Subsidence



Storms



Sea Level  
Rise



Salt Water  
Intrusion



Sediment  
Reduction



Canals



Oil & Gas  
Development



Levee  
System





# Louisiana

## Sustainable Coast

Cameron Parish  
Coastal  
Marsh Restoration

Land & Marsh Creation

NO R E V I D  
I  
S  
H  
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N  
S

Barrier Island Restoration

Grand Isle

Davis Pond  
Freshwater  
Diversion

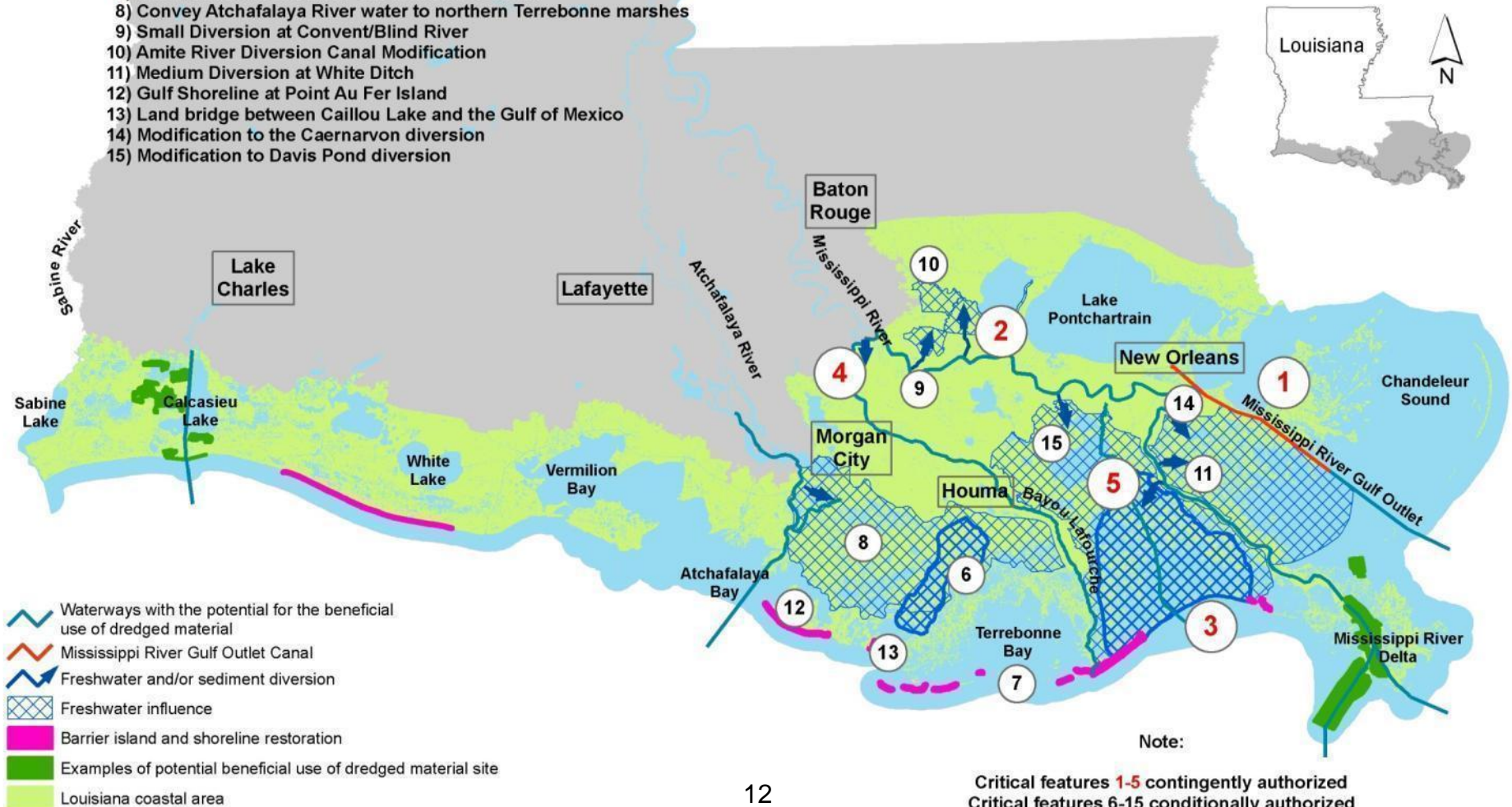


# LCA 15

## Louisiana Coastal Area Ecosystem Restoration WRDA 2007 Title VII

### Critical restoration features:

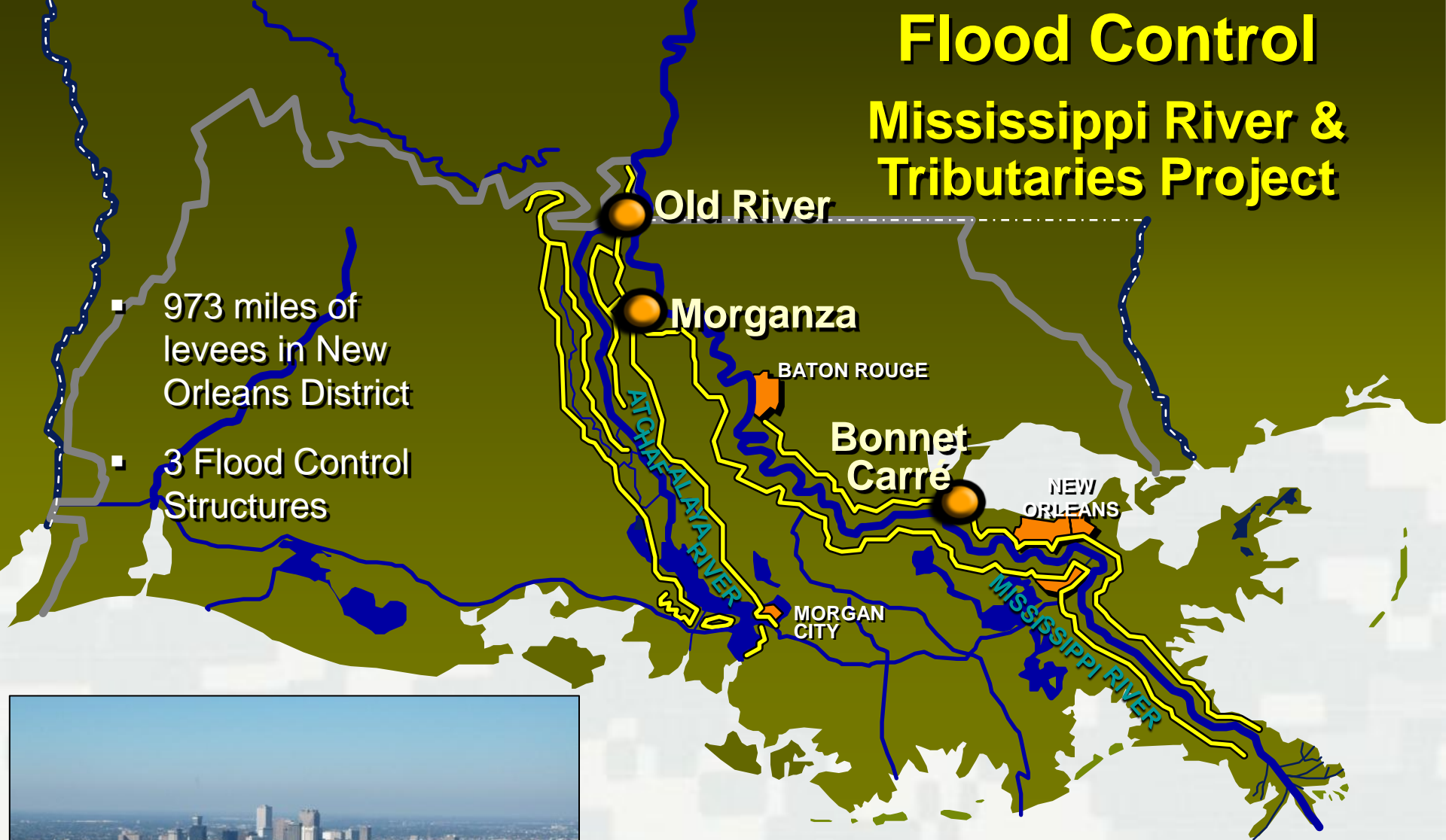
- 1) Mississippi River Gulf Outlet Canal (MRGO) environmental restoration
- 2) Small Diversion at Hope Canal
- 3) Barataria Basin Barrier Shoreline Restoration
- 4) Small Bayou Lafourche reintroduction
- 5) Medium diversion at Myrtle Grove with dedicated dredging
- 6) Multipurpose operation of the Houma Navigation Lock
- 7) Terrebonne Basin Barrier Shoreline Restoration
- 8) Convey Atchafalaya River water to northern Terrebonne marshes
- 9) Small Diversion at Convent/Blind River
- 10) Amite River Diversion Canal Modification
- 11) Medium Diversion at White Ditch
- 12) Gulf Shoreline at Point Au Fer Island
- 13) Land bridge between Caillou Lake and the Gulf of Mexico
- 14) Modification to the Caernarvon diversion
- 15) Modification to Davis Pond diversion



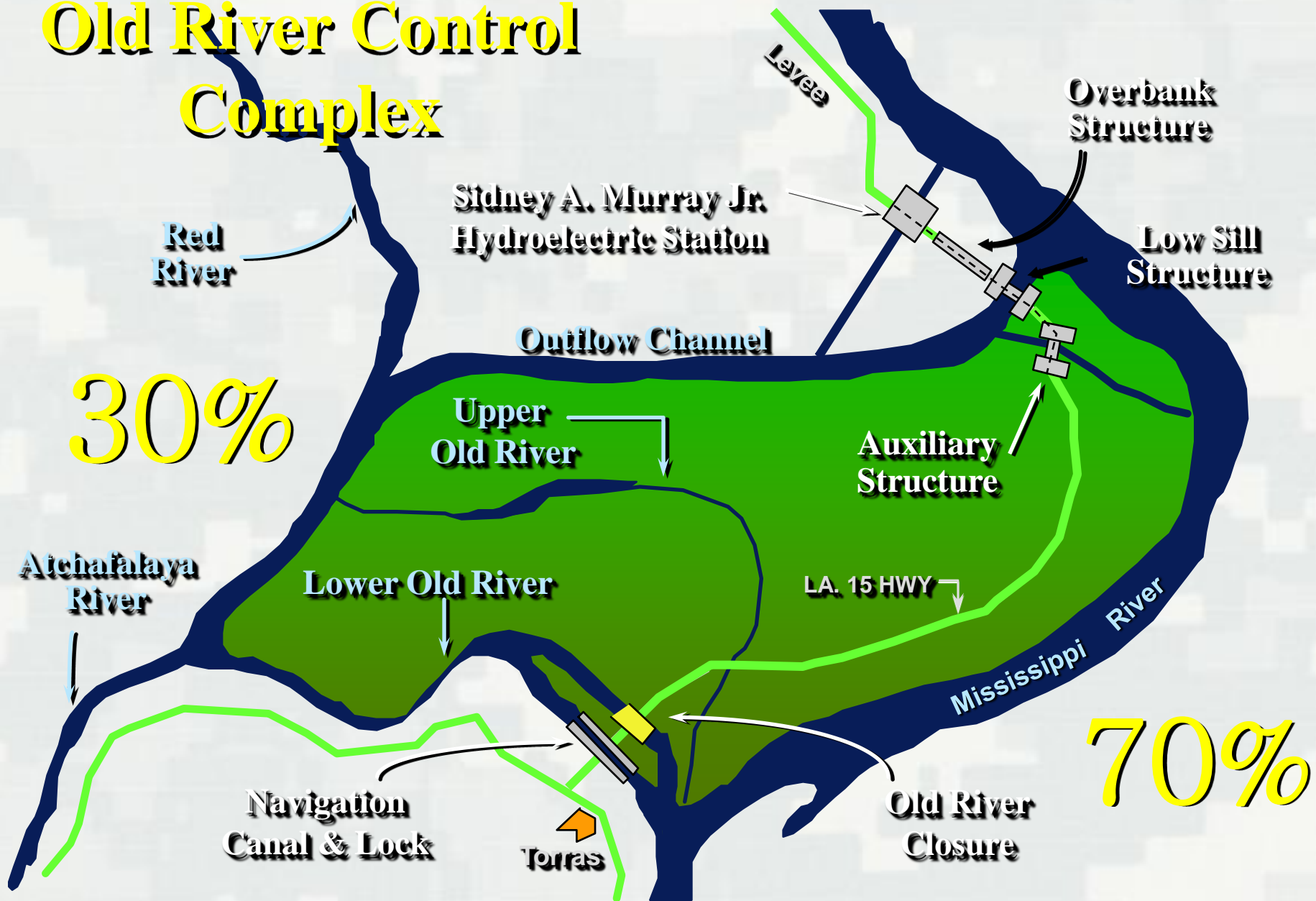
# Flood Control

## Mississippi River & Tributaries Project

- 973 miles of levees in New Orleans District
- 3 Flood Control Structures



# Old River Control Complex



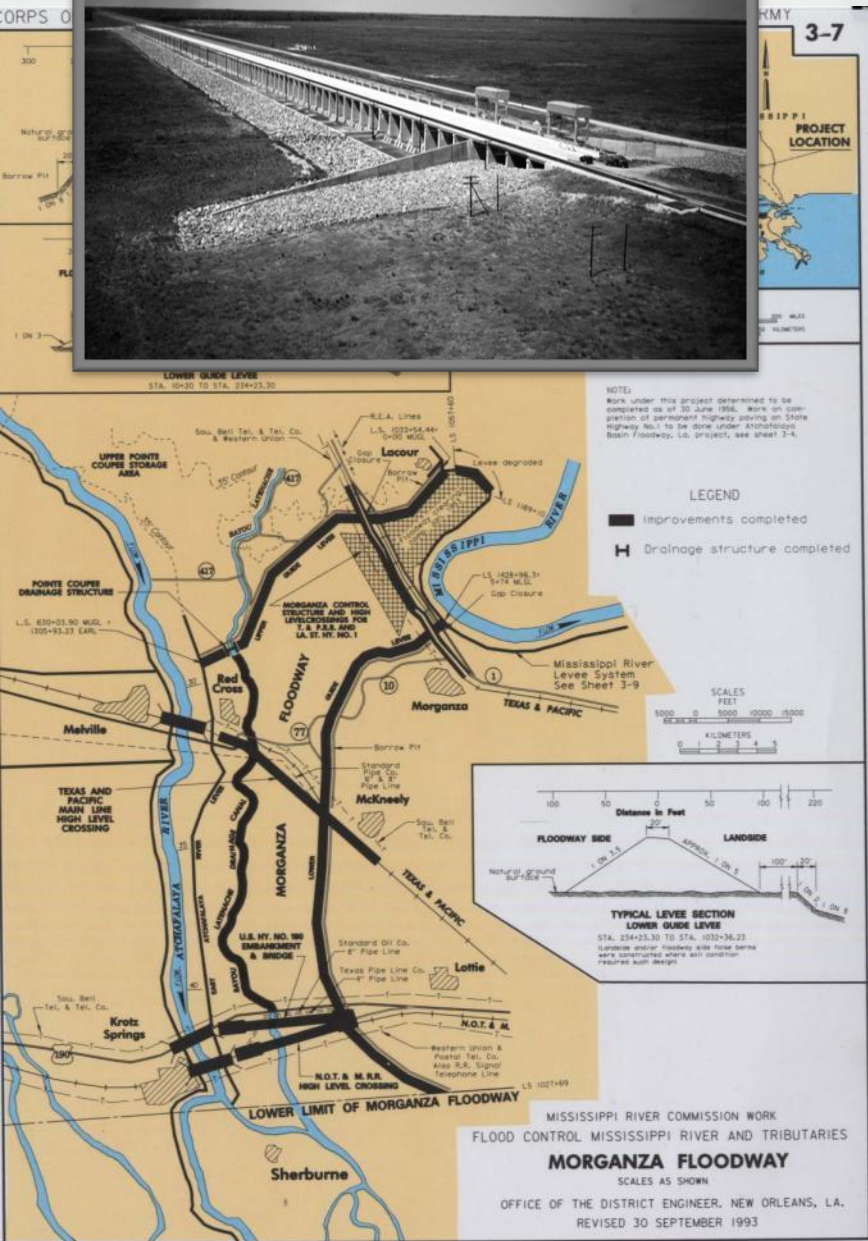


## Morganza in 1953

# Morganza Floodway

- Distance above New Orleans: 186 river miles
- Length of weir opening: 3,906 feet
- # of gate bays: 125
- Width of bays: 28 feet 3 inches, separated by piers 3 feet wide

- Design flow: 600,000 cfs
- Length of floodway: approx. 20 miles
- Width at river: approx. 5 feet
- Frequency of operation: 1973 and 2011



# Bonnet Carré Spillway

**Spillway  
construction  
in 1929**



- **Distance above New Orleans:** 32.8 river miles
- **Length of weir opening:** 7,000 feet
- **# of bays:** 350
- **Width of bays:** 20 feet
- **# of creosoted timbers:** 20 per bay
- **Design flow:** 250,000 cfs
- **Length from structure to lake:** 5.7 miles
- **Width at river:** 7,700 feet
- **Frequency of operation:** approx. every 10 years





# Questions?

